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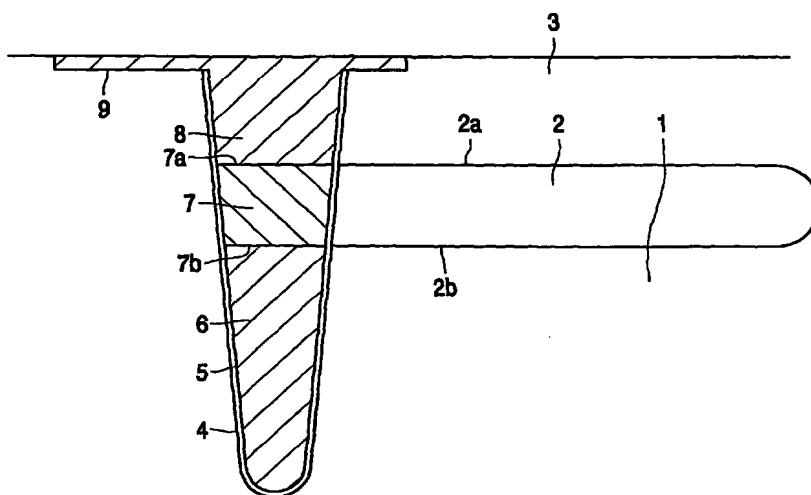
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[Continued on next page]

(54) Title: TRENCH ISOLATION STRUCTURE, SEMICONDUCTOR ASSEMBLY COMPRISING SUCH A TRENCH ISOLATION, AND METHOD FOR FORMING SUCH A TRENCH ISOLATION



(57) Abstract: The present invention provides a trench isolation structure, comprising a trench groove (4) in a semiconductor slab (1) with a buried layer (2). The trench groove (4) is lined with first insulating material (5), then filled with a first filler material (6) up to the level of the buried layer. Then second insulating material (7), for example an oxide, is preferably applied in the volume which is surrounded by the buried layer (2). The remaining part of the trench groove (4) is either filled with second filler material (8) or with second insulating material. Said structure provides lower capacitive coupling between buried layer (2) edge and substrate (1), with improved thermal behavior. The invention furthermore provides a semiconductor assembly comprising said trench isolation structure and at least one semiconductor device, as well as a method for forming such a trench isolation structure.



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